

CLAIMS

1. A positive resist composition comprising:

a resin component (A) containing an acid dissociable dissolution inhibiting

5 group whose alkali solubility increases under action of acid; and

an acid generator component (B) that generates acid on exposure, wherein

the resin component (A) is a copolymer comprising a first structural unit (a1)

derived from a hydroxystyrene and a second structural unit (a2) derived from a

(meth)acrylate ester containing an alcoholic hydroxyl group, in which 10 mol% or more

10 and 25 mol% or less of a combined total of hydroxyl groups within the structural units

(a1) and alcoholic hydroxyl groups within the structural units (a2) are protected with the

acid dissociable dissolution inhibiting groups, and

a weight average molecular weight of the copolymer prior to protection with the

acid dissociable dissolution inhibiting groups is 2,000 or more and 8,500 or less.

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2. A positive resist composition according to claim 1, wherein a molar ratio

between the structural units (a1) and the structural units (a2) within the component (A)

prior to protection with the acid dissociable dissolution inhibiting groups is within a

range from 85:15 to 70:30.

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3. A positive resist composition according to claim 1, wherein the structural unit

(a2) is a structural unit derived from a (meth)acrylate ester containing an aliphatic

polycyclic group with the alcoholic hydroxyl group.

25 4. A positive resist composition according to claim 3, wherein the structural unit

(a2) is a structural unit derived from a (meth)acrylate ester containing an adamantyl group with an alcoholic hydroxyl group.

5. A positive resist composition according to claim 1, wherein the acid dissociable
5 dissolution inhibiting group is a 1-lower alkoxyalkyl group.

6. A positive resist composition according to claim 1, wherein the copolymer of the resin component (A) further comprises a third structural unit (a3) derived from a styrene.

10 7. A positive resist composition according to claim 1, wherein a polydispersity (Mw/Mn ratio) of the copolymer prior to protection with the acid dissociable dissolution inhibiting groups is 2.0 or less.

8. A positive resist composition according to claim 1, wherein the acid generator
15 component (B) comprises a diazomethane-based acid generator.

9. A positive resist composition according to any one of claim 1 to 8, further comprising a secondary or tertiary lower aliphatic amine (C).

20 10. A positive resist composition according to claim 1, which is used for forming a positive resist film within a method of forming a resist pattern comprising, performing selective exposure of the positive resist film provided on a substrate, conducting a developing treatment to form a resist pattern, and subjecting the resist pattern to a thermal flow treatment, thereby narrowing the resist pattern.

11. A method of forming a resist pattern comprising:
- forming a positive resist film on a substrate using a positive resist composition according to claim 1;
- performing selective exposure of the positive resist film;
- 5 conducting a developing treatment to form a resist pattern; and
- subjecting the resist pattern to a thermal flow treatment, thereby narrowing the resist pattern.